

Application Number 10/047,272
Amendment dated August 27, 2004
Reply to Office Action of May 27, 2004

REMARKS

The Applicants note that the Office Action Summary does not indicate whether the drawings filed in the application are acceptable. Confirmation of their acceptability is respectfully requested.

Claims 1-6 and 11-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kornrumpf (U.S. Patent Number 5,345,205). Claims 7-10 are also rejected under 35 U.S.C. § 103(a) as being unpatentable over Kornrumpf. In view of the amendments to the claims and the following remarks, the rejections are respectfully traversed, and reconsideration of the rejections is requested.

The claims are amended herein to specifically set forth details of the applicant's invention, namely, that the semiconductor chips of the invention are directly mounted on the claimed folded film. Specifically, the claims are amended to clarify that there are no intervening structures between the applicant's claimed semiconductor chips and the claimed film. It is believed that these amendments to the claims serve to clarify the patentable distinctions between the invention and the cited Kornrumpf reference.

In Kornrumpf, fully assembled modules 101, 102, 103, designed for use in a microwave system, are mounted to a folded interconnect structure or film 130. Semiconductor chips, microwave devices, monolithic microwave integrated circuits and other components, identified by reference number 120, and collectively referred to as "chips," are mounted on substrates 110 in the modules 101, 102 and 103. Hence, the Kornrumpf structure includes intervening structures between any chips 120 and the folded film 130. This is in direct contrast to the claims as amended herein, which require that no intervening structure be present between the mounted chips and the folded film. Accordingly, Kornrumpf fails to teach or suggest the invention set forth in the amended claims.

Application Number 10/047,272
Amendment dated August 27, 2004
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The Examiner refutes the patentability of the applicant's claimed direct mounting of chips on a film by stating, "the omission of an element and its function where not needed is obvious." Thus, the position of the Examiner is that any intervening structures taught by Kornrumpf are not needed and, therefore, their omission is obvious. The applicants disagree with this assessment of the teaching of Kornrumpf.

The Kornrumpf reference is directed to a multi-module microwave system. Such systems are precisely manufactured to extremely strict specifications to provide the operational characteristics required for microwave operation. For example, in such systems, monolithic microwave integrated circuits (MMICs), active microwave devices such as gallium arsenide transistors, passive microwave components and other non-microwave components such as logic and control structures, are commonly formed on precisely manufactured substrates in assembled microwave modules. Referring to column 1, lines 38-56 of Kornrumpf, it is known in the art to fabricate microwave systems from a variety of components by providing a ceramic substrate having micro-strip RF circuitry, dc supply lines, logic lines, control lines and contact pads fabricated thereon and by attaching devices and components such as MMICs, gallium arsenide transistors, other microwave and supporting components to the substrate and connecting them to the circuitry on the substrate using wire bonds or tab interconnections.

Hence, to one of skill in the art reading Kornrumpf, the intervening substrates taught by Kornrumpf would not be considered an unneeded element, as asserted by the Examiner. The applicants submit that to refer to the substrate in a microwave system such as that taught by Kornrumpf as an unneeded element is to ignore the explicit teaching of the reference. Clearly, to one of skill in the art, the intervening substrates in Kornrumpf are needed. Furthermore, the reference itself makes it clear that the substrates taught by the reference are required. Hence, the applicants submit that the Examiner's position that the amended claims, which specifically recite the absence of intervening structures between semiconductor chips and a folded mounting film, are obvious as claiming the omission of an unneeded element taught in a prior art reference, is

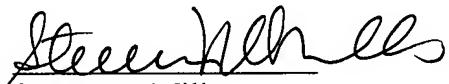
Application Number 10/047,272
Amendment dated August 27, 2004
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not supported by the Kornrumpf reference. Specifically, the intervening substrates in Kornrumpf are essential elements of the device taught by Kornrumpf and, therefore, cannot simply be omitted. Accordingly, it is believed that the Kornrumpf reference neither anticipates nor renders obvious the amended claims. Therefore, reconsideration of the rejections of the claims under 35 U.S.C. § 103(a) based on Kornrumpf is respectfully requested.

In view of the amendments to the claims and the foregoing remarks, it is believed that all claims pending in the application are in condition for allowance, and such allowance is respectfully solicited. If a telephone conference will expedite prosecution of the application, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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